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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,585

07/11/2007

Joao Merendeiro

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06/16/2011

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ALEXANDRIA, VA 22314

EXAMINER

DAVIS, MARY ALICE

ART UNIT

PAPER NUMBER

3748

NOTIFICATION DATE

DELIVERY MODE

06/16/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/568,585	<b>Applicant(s)</b> MERENDEIRO ET AL.	
	<b>Examiner</b> MARY A. DAVIS	<b>Art Unit</b> 3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-23, 26 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-23, 26 and 28-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***1. Claims 15-23, 26, and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by UNGAR (U.S. Patent 2,462,924).***

Regarding **claim 19**, UNGAR discloses:

An external gear pump, comprising:

at least one pair of mutually meshed toothed gears (see Figures 1-4) including a driving gear (10) and a driven gear (11), each tooth of the gears being comprised of a root including two concave root sectors (h, j, g, i), with each of the concave root sectors being joined at an origin to a concave root sector of a neighboring tooth (see Figures 1-4 and 9), and a top including a first side and a second side (see Figures 1-4, where the first and second sides are on either side of (b)), with each of the sides of the top joined to a respective one of the concave root sectors by a first transition point (see Figures 1-4, where the transition point is where h and f connect to each other),

wherein each of the sides of the top includes two convex sectors (d, f, c, e) joined by a second transition point (see Figures 1-4) defining a discontinuity in curvature of a profile of the tooth,

wherein the teeth in mesh have at all times at least one primary bearing point ((3) in Figure 2) by which the driving gear moves the driven gear (see Figures 1-4), and at least one secondary contact point (secondary contact point is (1, 2) in Figure 3) (see Figures 1-4), and

wherein the first transition point of one of the teeth in mesh is successively the primary bearing point and the secondary contact point in the course of meshing (see Figures 1-4).

Regarding **claim 15**, UNGAR discloses:

the second transition point defines a bottom of a notch made in the tooth profile (see Figures 1-4).

Regarding **claim 16**, UNGAR discloses:

the convex sector following the first transition point has a spherical involute profile (see Figures 1-4).

Regarding **claim 17**, UNGAR discloses:

the convex sector following the second transition point has a spherical involute profile (see Figures 1-4).

Regarding **claim 18**, UNGAR discloses:

the top of the tooth includes a rounded end sector (b) joined to each of the convex sectors following the second transition point by a transition sector (see Figures 1-4).

Regarding **claim 20**, UNGAR discloses:

two of the toothed gears are identical (see Figures 1-4 and 9).

Regarding **claim 21**, UNGAR discloses:

the first transition point on one side of one tooth rolls over a convex sector on one side of a tooth of an opposite meshed gear (see Figures 1-4).

Regarding **claim 22**, UNGAR discloses:

a shape of an end sector of the teeth matches a shape of a concave sector defined by juxtaposition of two roots of neighboring teeth (see Figures 1-4).

Regarding **claim 23**, UNGAR discloses:

an end sector of one tooth rolls between two teeth of an opposite meshed gear, while maintaining contact therewith until the one tooth slips away from the two teeth of the opposite meshed gear (see Figures 1-4 and 9).

Regarding **claim 26**, UNGAR discloses:

the teeth of two meshed gears are in contact over more than one pitch (see Figures 1-4).

Regarding **claim 28**, UNGAR discloses:

at least one tooth of the mutually meshed gears is symmetric (see Figures 1-4 and 9).

Regarding **claim 29**, UNGAR discloses:

each tooth of the mutually meshed gears is symmetric (see Figures 1-4 and 9).

Regarding **claim 30**, UNGAR discloses:

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when the one of the teeth in mesh is successively the secondary contact point, the primary contact point of the teeth in mesh is on a next tooth downstream in a direction of rotation of the pair of gears (see Figures 1-4 and 9), and

after the primary contact point is on the next tooth, the primary contact point is transferred back to the one of the teeth in mesh that is upstream from the next tooth before the next tooth is out of mesh (see Figures 1-4 and 9).

### ***Communication***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY A. DAVIS whose telephone number is (571)272-9965. The examiner can normally be reached on Monday thru Thursday; 5:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARY A DAVIS/  
Primary Examiner, Art Unit 3748